



[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-302; NRC-2015-0042]**

**Duke Energy Florida, Inc.**

**Crystal River Unit 3 Nuclear Generating Plant**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Environmental assessment and finding of no significant impact; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of exemptions in response to a request from Duke Energy Florida, Inc. (DEF, the licensee) that would permit the licensee to reduce its emergency planning (EP) activities at the Crystal River Unit 3 Nuclear Generating Plant (CR-3). CR-3 has been shut down since September 26, 2009, and the final removal of fuel from the reactor vessel was completed on May 28, 2011. By letter dated February 20, 2013, DEF submitted a certification to the NRC of permanent cessation of power operations and the removal of fuel from the reactor vessel. The licensee is seeking exemptions that would eliminate the requirements to maintain offsite radiological emergency plans and reduce some of the onsite EP activities based on the reduced risks at the permanently shutdown and defueled reactor. Offsite EP provisions would still exist using a comprehensive emergency management plan process. The NRC staff is issuing a final environmental assessment (EA) and final finding of no significant impact (FONSI) associated with the proposed exemptions.

**DATES:** The EA and FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

**ADDRESSES:** Please refer to Docket ID **NRC-2015-0042** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2015-0042**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**  
You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced in this document (if that document is available in ADAMS) is provided the first time that a document is referenced.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Michael D. Orenak, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-3229; e-mail: [Michael.Orenak@nrc.gov](mailto:Michael.Orenak@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Introduction.**

Crystal River Unit 3 Nuclear Generating Plant (CR-3) is a permanently shutdown and defueled power reactor in the process of decommissioning. CR-3 is located in Citrus County, Florida, 80 miles north of Tampa, FL. Duke Energy Florida, Inc. (DEF, the licensee) is the holder of Facility Operating License No. DPR-72 for CR-3. CR-3 has been shut down since September 26, 2009, and the final removal of fuel from the reactor vessel was completed on May 28, 2011. By letter dated February 20, 2013, DEF submitted a certification to the NRC of permanent cessation of power operations and the removal of fuel from the reactor vessel. As a permanently shutdown and defueled facility, and pursuant to section 50.82(a)(2) of Title 10 of the *Code of Federal Regulations* (10 CFR), CR-3 is no longer authorized to be operated or to have fuel placed into its reactor vessel, but the licensee is still authorized to possess and store irradiated nuclear fuel. Irradiated fuel is currently stored onsite at CR-3 in a spent fuel pool (SFP). The licensee has requested exemptions from certain emergency planning (EP) requirements in 10 CFR part 50, "Domestic Licensing of Production and Utilization Facilities," for CR-3. The NRC regulations concerning EP do not recognize the reduced risks after a reactor is permanently shut down and defueled. A permanently shutdown reactor, such as CR-3, must continue to maintain the same EP requirements as an operating power reactor under the

existing regulatory requirements. To establish a level of EP commensurate with the reduced risks of a permanently shutdown and defueled reactor, DEF requires exemptions from certain EP regulatory requirements before it can change its emergency plans.

The NRC is considering issuance of exemptions to DEF from portions of 10 CFR 50.47, "Emergency plans," and 10 CFR part 50, appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," which would permit DEF to modify its emergency plan to eliminate the requirements to maintain offsite radiological emergency plans and reduce some of the onsite EP activities based on the reduced risks at CR-3, due to its permanently shutdown and defueled status. Consistent with 10 CFR 51.21, the NRC has reviewed the requirements in 10 CFR 51.20(b) and 10 CFR 51.22(c) and determined that an environmental assessment (EA) is the appropriate form of environmental review for the requested action. Based on the results of the EA, which is provided in Section II of this document, the NRC has determined not to prepare an environmental impact statement for the proposed action, and is issuing a finding of no significant impact.

## **II. Environmental Assessment.**

### *Identification of the Proposed Action*

The proposed action would exempt DEF from meeting certain requirements set forth in 10 CFR 50.47 and appendix E to 10 CFR part 50. More specifically, DEF requested exemptions from (1) certain requirements in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors, (2) certain requirements in 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway EP zones for nuclear power reactors, and (3) certain requirements in 10 CFR part 50, appendix E, section IV, which

establishes the elements that make up the content of emergency plans. The proposed action of granting these exemptions would result in the elimination of the requirements for the licensee to maintain offsite radiological emergency plans and reduce some of the onsite EP activities at CR-3, based on the reduced risks at the permanently shutdown and defueled reactor. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities will be retained. If necessary, offsite protective actions could still be implemented using a comprehensive emergency management plan (CEMP) process. A CEMP in this context, also referred to as an emergency operations plan (EOP), is addressed in the Federal Emergency Management Agency's Comprehensive Preparedness Guide (CPG) 101, "Developing and Maintaining Emergency Operations Plans." The CPG 101 is the foundation for State, territorial, tribal, and local EP in the United States. It promotes a common understanding of the fundamentals of risk-informed planning and decisionmaking, and helps planners at all levels of government in their efforts to develop and maintain viable, all-hazards, all-threats emergency plans. An EOP is flexible enough for use in all emergencies. It describes how people and property will be protected; details regarding who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available; and outlines how all actions will be coordinated. A CEMP is often referred to as a synonym for "all hazards planning."

The proposed action is in accordance with the licensee's application dated September 26, 2013, "Permanently Defueled Emergency Plan and Emergency Action Level Scheme, and Request for Exemption to Certain Radiological Emergency Response Plan Requirements Defined by 10 CFR [Part] 50" (ADAMS Accession No. ML13274A584), as supplemented by letters dated March 28, 2014, and August 28, 2014. In its letter dated March 28, 2014 (ADAMS Accession No. ML14098A072), DEF provided responses to the NRC staff's

request for additional information concerning the proposed exemptions. In its letter dated August 28, 2014 (ADAMS Accession No. ML14251A237), DEF provided a supplement, which amended its request to align with the exemptions approved in Staff Requirements Memorandum to SECY-14-0066 (ADAMS Accession No. ML14219A366).

#### *Need for the Proposed Action*

The proposed action is needed for DEF to revise the CR-3 emergency plan to reflect the permanently shutdown and defueled status of the facility. The EP requirements currently applicable to CR-3 are for an operating power reactor. There are no explicit regulatory provisions distinguishing EP requirements for a power reactor that has been permanently shut down from those for an operating power reactor. Therefore, since the 10 CFR part 50 license for CR-3 no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel as specified in 10 CFR 50.82(a)(2), the occurrence of postulated accidents associated with reactor operation is no longer credible.

In its exemption request, the licensee identified six possible radiological accidents at CR-3 in its permanently shut down and defueled condition. These are (1) a fuel handling accident, (2) a radioactive waste handling accident, (3) a loss of SFP normal cooling (boil off), (4) a loss of SFP inventory with air-cooling, (5) an adiabatic heatup of the hottest fuel assembly, and (6) a loss of SFP inventory radiation dose. The NRC staff evaluated these possible radiological accidents in the Commission Paper (SECY) 14-0118, "Request by Duke Energy Florida, Inc., for Exemptions from Certain Emergency Planning Requirements," dated October 29, 2014 (ADAMS Accession No. ML14219A444). In SECY-14-0118, the staff verified that DEF's analyses and calculations provide reasonable assurance that if the requested exemptions were granted, then (1) for a design-basis accident (DBA), an offsite

radiological release will not exceed the Environmental Protection Agency's (EPA) Protective Action Guides (PAGs) at the exclusion area boundary, as detailed in the EPA "PAG Manual, Protective Action Guides and Planning Guidance for Radiological Incidents," dated March 2013, which was issued as Draft for Interim Use and Public Comment; and, (2) in the unlikely event of a beyond DBA resulting in a loss of all SFP cooling, there is sufficient time to initiate appropriate mitigating actions, and in the unlikely event that a release is projected to occur, there is sufficient time for offsite agencies to take protective actions using a CEMP to protect the health and safety of the public. The Commission approved the NRC staff's recommendation to grant the exemptions in the Staff Requirements Memorandum to SECY-14-0118, dated December 30, 2014 (ADAMS Accession No. ML14364A111).

Based on these analyses, the licensee states that complete application of the EP rule, in its particular circumstances as a permanently shutdown and defueled reactor with sufficiently cooled spent fuel in its spent fuel pool, would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. DEF also states that it would incur undue costs in the application of operating plant EP requirements for the maintenance of an emergency response organization in excess of that actually needed to respond to the diminished scope of credible accidents for a permanently shutdown and defueled reactor, with sufficiently cooled spent fuel in its spent fuel pool.

#### *Environmental Impacts of the Proposed Action*

The NRC staff concluded that the exemptions, if granted, will not significantly increase the probability or consequences of accidents at CR-3 in its permanently shutdown and defueled condition. There will be no significant change in the types of any effluents that may be released offsite. There will be no significant increase in the amounts of any effluents that may be

released offsite. There will be no significant increase in individual or cumulative occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regards to potential non-radiological impacts, the proposed action does not have any foreseeable impacts to land, air, or water resources, including impacts to biota. In addition, there are also no known socioeconomic or environmental justice impacts associated with the proposed action. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

#### *Environmental Impacts of the Alternatives to the Proposed Action*

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the application would result in no change in current environmental impacts. Therefore, the environmental impacts of the proposed action and the alternative action are similar.

#### *Alternative Use of Resources*

The proposed action does not involve the use of any different resources than those previously considered in the Final Environmental Statement for CR-3, dated May 1973 (ADAMS Accession No. ML091520178).



### *Agencies or Persons Consulted*

The NRC staff did not enter into consultation with any other Federal agency or with the State of Florida regarding the environmental impact of the proposed action. On January 20, 2015, the Florida state representative was notified of this EA and FONSI and did not provide any comments.

### **III. Finding of No Significant Impact.**

The licensee has proposed exemptions from (1) certain requirements in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors; (2) certain requirements in 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway EP zones for nuclear power reactors; and (3) certain requirements in 10 CFR part 50, appendix E, section IV, which establishes the elements that make up the content of emergency plans. The proposed action of granting these exemptions would result in the elimination of the requirements for the licensee to maintain offsite radiological emergency plans and reduce some of the onsite EP activities at CR-3, based on the reduced risks at the permanently shutdown and defueled reactor. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities will be retained.

Consistent with 10 CFR 51.21, the NRC conducted the EA for the proposed action included in Section II of this document and incorporated by reference in this finding. On the basis of this EA, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has decided not to prepare an environmental impact statement for the proposed action.

This EA and FONSI is based on the licensee's letter dated September 26, 2013, as supplemented by letters dated March 28, 2014, and August 28, 2014. Otherwise, there are no other environmental documents associated with this review. These documents are available for public inspection as indicated above.

Dated at Rockville, Maryland, this 23 day of February, 2015.

For the Nuclear Regulatory Commission.

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